

GENERAL INFORMATION

A series of MICRO2 two-channel receivers is designed to work with gate drivers, roller shutters, and other automation devices, where the control pulse is required. It provides a simple and inexpensive way to expand the functionality of the installation of a remote control.

SPECIFICATIONS AND UTILITY

- Receiver power supply: 12...24VAC/DC
- Receiver's memory: MICRO2 - 200 remotes of DTM433MHz series
MICRO2 868 - 200 remotes of DTM868MHz series
MICRO2 Duo - 200 remotes of DTM433MHz or/and DTM868MHz
- Operating temperature: from -20°C to +55°C
- External dimensions of housing: 79x138x33 mm
- Degree of protection: IP-53
- Mounting: outdoors or in other devices housing
- Weight: 125 g
- Frequency: MICRO2 - 433MHz
MICRO2 868 - 868MHz
MICRO2 Duo - 433MHz and 868MHz
- Relay output: 2 NO/NC outputs
- Operating mode: monostable, bistable, momentary
- Monostable activation time: 0,5s / from 1 to 127s every 1s / from 1 to 127 min. every 1 min.
- Very clear and simple user interface, based on LEDs and two buttons;
- The ability to add remotes without need of using receiver button;
- The ability to add remotes programmed outside installation - Galactic function;
- The ability to disable operation of remotes added to receiver - service lock;
- The ability to manage a receiver via USB;
- The ability to delete a single remote (the need to have removed remote);
- The ability to verify the number of added remotes.

	MICRO2	MICRO2 868	MICRO2 Duo
EASY REMOTE ADDING	●	●	●
EASY REMOTE ADDING LOCK	●	●	●
GALACTIC FUNCTION	lack	●	● *only DTM868MHz
SERVICE LOCK	●	●	●
VERIFYING NUMBER OF ADDED REMOTES	●	●	●
MANAGEMENT VIA USB	●	●	●

Tab. 1. Availability of functions in MICRO2 versions.

1. RECEIVER INSTALLATION

The receiver consists of a splash-proof surface-mount housing with screw-rod antenna (Figure 1) and the electronic board (Figure 2).

Receiver housing of IP-53 allows flexibility in selecting the mounting location. The receiver can be placed directly under the gate driver cover as well as on the post of the fence.

Access to the screw terminals and interface of the receiver is possible after removing the external antenna and sliding the receiver cover.

Before connecting the wires must be carried through the cable hole of 8mm diameter.

Receiver housing is equipped with the USB connector cover, so you can access the connector without removing the cover.

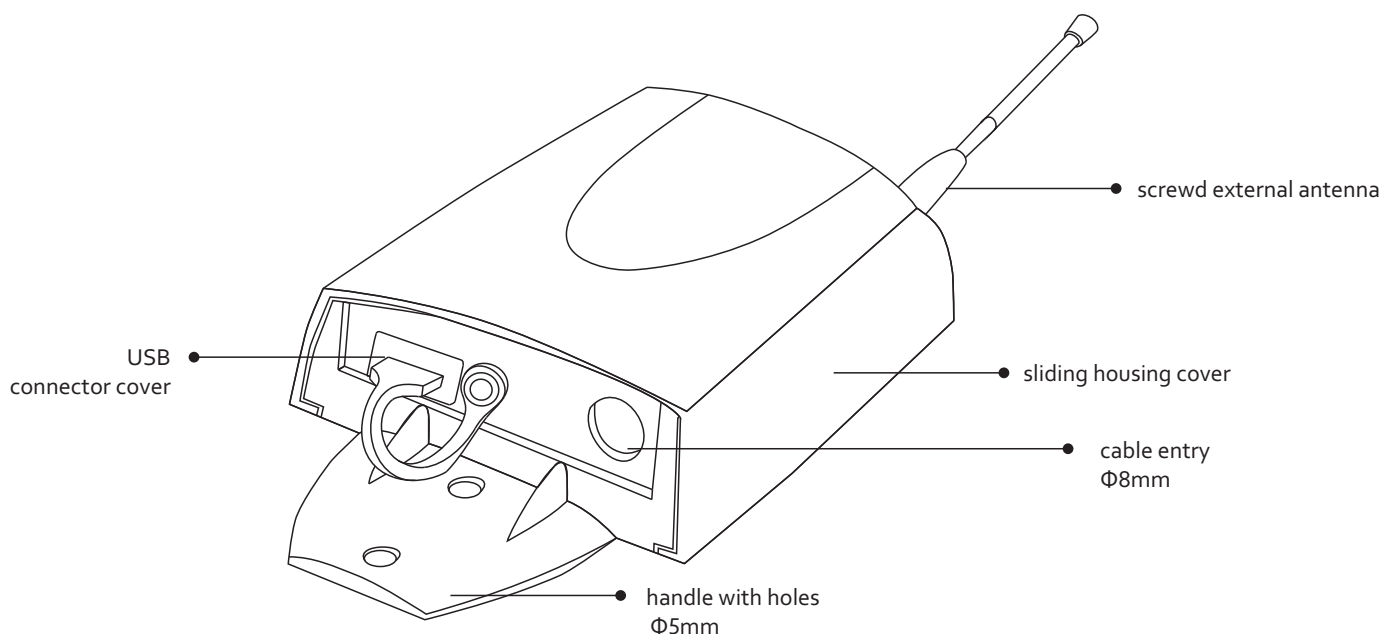


Fig. 1. Receiver housing.

Choosing a mounting location be aware of:

- the negative impact of electricity and metal objects neighborhood to receiver antenna,
- the negative impact of radio interference from sources other than the remote,
- the negative impact of dense development, humid or concrete walls,
- reducing the range of remote with used battery,
- increasing the range with increasing the height of the receiver antenna.

Receiver board has a microprocessor control unit with LEDs and buttons; executive elements realized on two relays; and screw connectors for connecting the power supply, antenna and controlled devices.

The controlled device must be connected to the receiver output. If the device requires normally open (NO) control, connect the device to the terminals NO and C. If device requires normally closed (NC) control, connect the device to the terminals NC and C.

The receiver is equipped with a rod antenna. In order to increase the radio coverage use an external antenna using coaxial cable with an impedance of 50Ω. Connect antenna's coaxial cable to the terminal marked Υ (central cord) and to the terminal marked GND.

12-24V AC/DC connection is indicated by PWR LED. During receiver operation, each switching of C1/C2 output channel is indicated by C1/C2 LED.

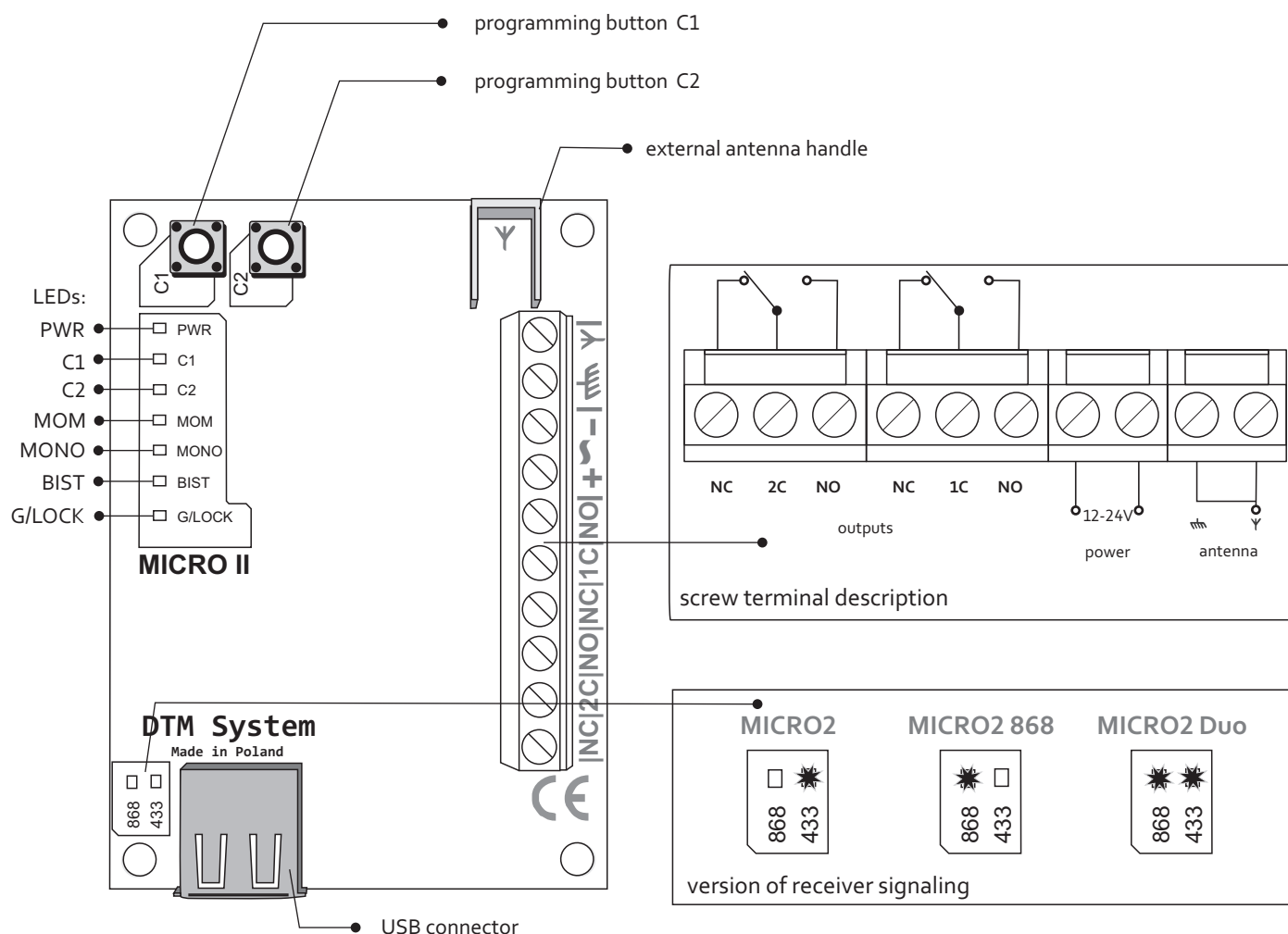


Fig. 2. View of the receiver board with description.

2. RECEIVER PROGRAMMING

MICRO2 receiver has ability to program parameters of work. Before programming refer to Figure 2. showing view of mainboard, programming buttons C1 and C2 and LEDs location.

2.1 Adding remote to receiver memory

When receiver is on the working mode, press and hold programming button of chosen channel C1/C2. Red LED C1/C2 lights on, then press chosen remote button. Successful adding is indicated by LED C1/C2 blinking.

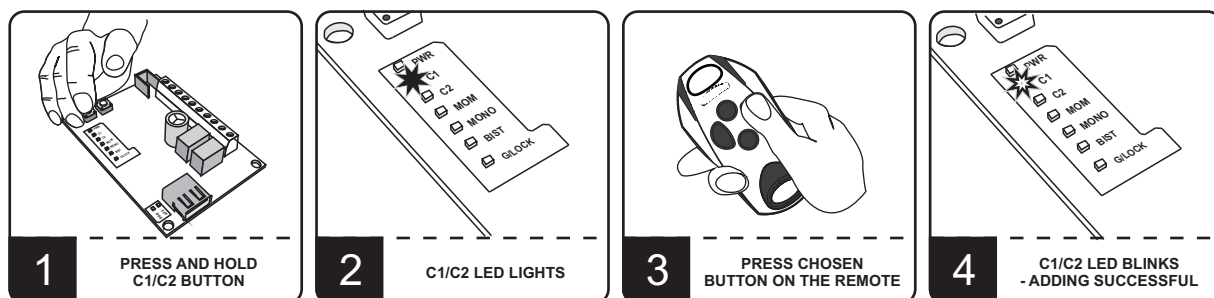


Fig. 3. Adding a remote.

2.2. Deleting remote from receiver memory

To delete remote from memory press and hold simultaneously receiver both C1 and C2 buttons. All LEDs blink, then press any button of remote that you want to delete. Successful deleting is indicated by C1 LED blinking.



Pressing C1 and C2 buttons over 10 seconds will format receiver memory. (see section 2.12)

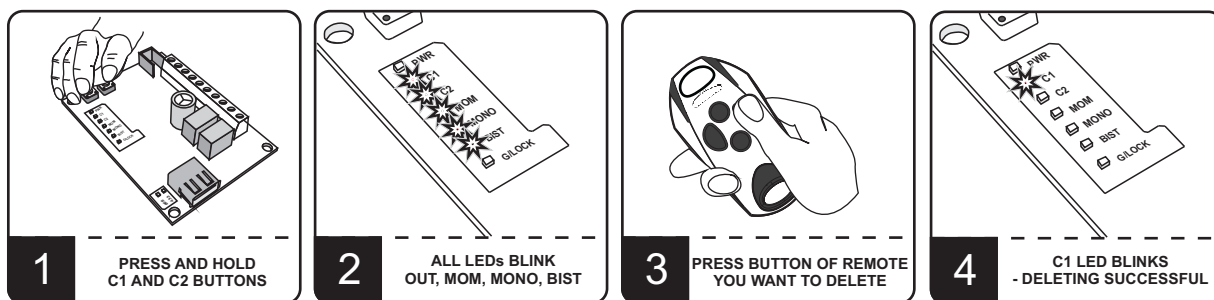


Fig. 4. Deleting a remote.

2.3. Easy remote adding function

Easy remote adding function allows to register remote without physical access to receiver buttons. It is necessary to be in receiver radio range and to have previously added remote.

For easy adding press, in receiver radio range, for 15 seconds button of already added remote. Then, in time no longer than 3 seconds, press and hold for 15 seconds button of remote you want to add.

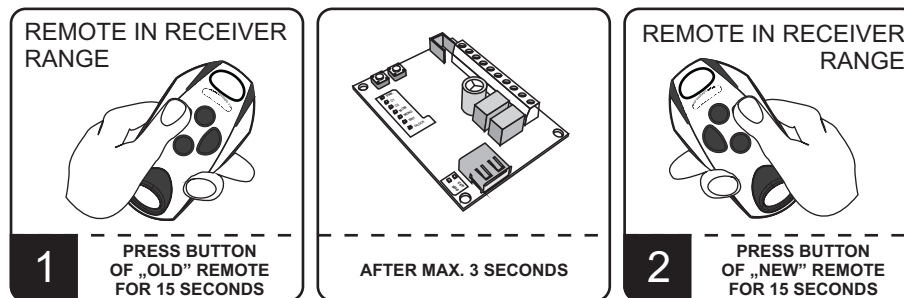


Fig. 5. Easy remote adding.

Easy remote adding function is not available when:

- channel is configured in momentary mode
- easy remote adding function is locked
- if used remotes are two of a different frequency
- service lock is on

Failure in easy remote adding may be caused by:

- low battery of remote
- radio interference during procedure
- receiver memory full

2.4. Easy remote adding function locking /unlocking

To secure the device against unwanted remote adding (especially important in access protected zones) easy remote adding function must be locked. To lock/unlock function press and hold C1 and C2 buttons, then release one C1 or C2 button. After 5 seconds C1 and C2 LEDs will light on alternately every 5 seconds.

Releasing second C1 or C2 button when:

- C1 LED lights on - easy remote adding function locked,
- C2 LED light on - easy remote adding function unlocked.



Releasing second button in time no more than 5 seconds from releasing first button will cause leaving the procedure without saving changes.

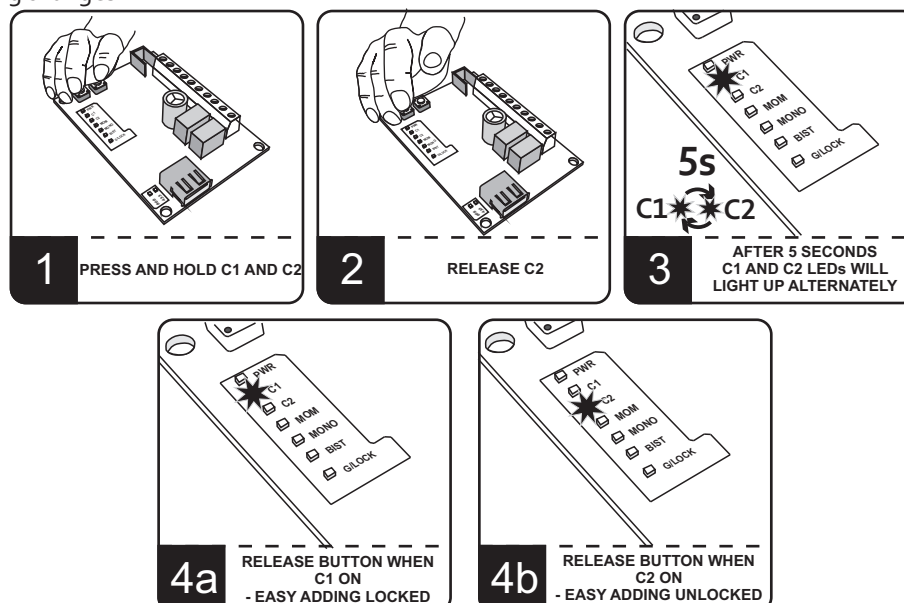


Fig.6. Locking/unlocking easy remote adding.

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2.5. Entering of authentication code (unable for MICRO2 version)

Galactic function allows adding remotes programmed and configured outside the installation, without need to use receiver buttons.



It is necessary to have remote with Galactic function, remote has to be programmed with authentication code by GPROG programmer.

To enter authentication code to receiver press C1 or C2 button. C1 or C2 LED lights on and LED indicating currently set working mode lights on. Press repeatedly C1 or C2 button to light on G/LOCK LED. LED will pulse. While LED pulsing press and hold for 5 seconds two buttons of remote with Galactic function.



Remote used in this procedure becomes "master" remote. It is necessary to tag the remote for future use. One "master" remote can be used for several receivers.



Frequency of G/LOCK LED pulsing indicates is authentication code set or not.

Very fast pulsing (over 10 pulses per second) indicates lack of Galactic code in the receiver.

Slow pulsing (1 pulse per second) indicates Galactic code is set in the receiver.

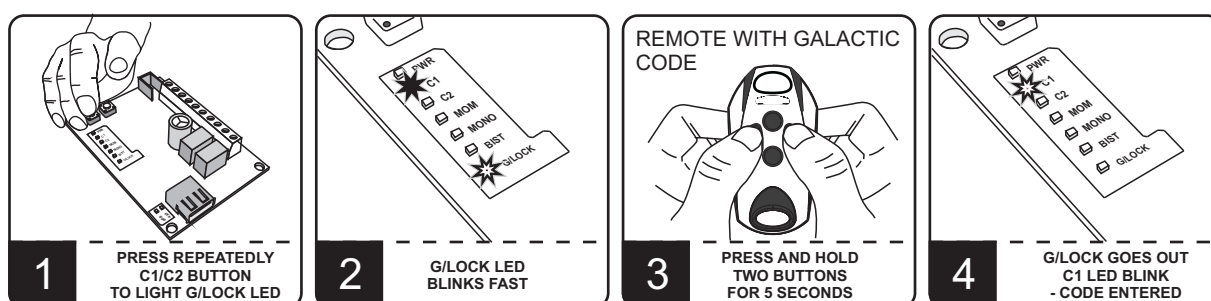


Fig.7. Entering Galactic code.

2.6. Deleting Galactic authentication code (not available for MICRO2 version)

To delete authentication code of Galactic function it is necessary to have "master" remote, that authentication code has been set with.

To delete authentication code press C1 or C2 button. C1 or C2 LED lights on and LED indicating currently set working mode lights on. Press repeatedly C1 or C2 button to light on G/LOCK LED. LED will pulse. While LED pulsing press and hold for 5 seconds two buttons of "master" remote, that code has been previously set with.



Galactic authentication code is deleted after memory format (section 2.12).

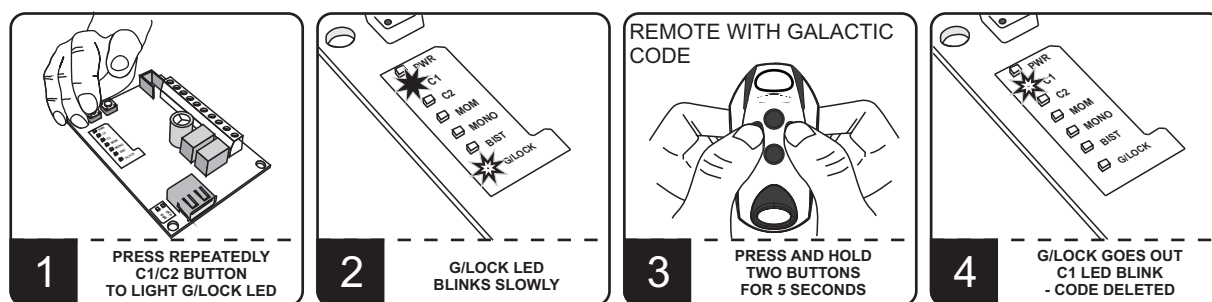


Fig.8. Deleting Galactic code.

2.7. Adding the remote with the use of Galactic function (not available for MICRO2 version)

The condition of the success of adding the remote with the use of the Galactic function is the compatibility of authentication codes set in the receiver and the remote.

In order to add the remote, press and hold for 5 seconds any two buttons on the remote, in receiver radio range.

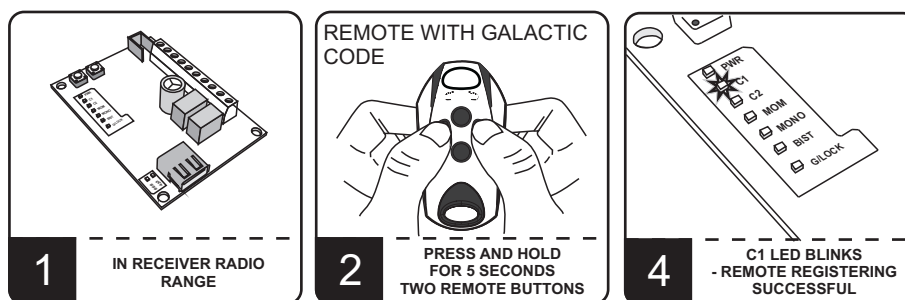


Fig.9. Adding a remote with the use of Galactic function.

Failed adding can be caused by:

- incompatibility of authentication codes in the receiver and transmitter,
- low battery,
- radio interference that may occur during the procedure,
- the receiver memory is full (attempt to add 201 remote).

2.8. Service lock. Adding / deleting the "master" remote.

Service lock is a function which switches off operation of remotes added to the receiver at the time of eg. maintenance on the installation. Enabling service lock cause that receiver does not respond to the signal from the remotes.

To activate service lock it is necessary to add "master" remote to the receiver. Adding "master" remote is independent of adding remotes to the channels. "Master" remote can be used for control of the channel and for switching the service lock as well. You can enter up to 5 "master" remotes to activate/deactivate the service lock.

To add/delete a "master" remote press C1 or C2 button. LED C1 or C2 and LED indicating the currently selected operating mode MOM / MONO / BIST will light. By pressing the C1 or C2 button repeatedly light the G/LOCK LED. G/LOCK LED will blink. During this time, press and hold for 3 seconds remote button. C1 LED blinks if "master" remote added, C2 LED blinks if "master" remote deleted.

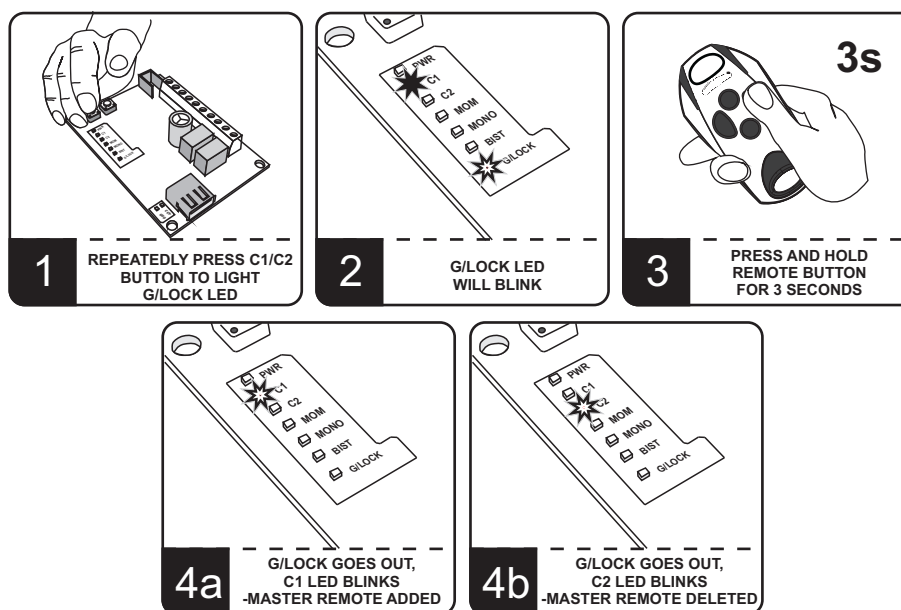


Fig.10. Adding/deleting the „master” remote.



It is recommended that the "master" remote was not added to the receiver and served only to activate/deactivate the service lock.

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2.9. The service lock enable / disable.

To enable / disable the service lock you must have "master" remote (point 2.8.).

To enable / disable the service lock press five times in no more than 5 seconds, in receiver radio range, any button of the "master" remote. Service lock enabling signals G/LOCK LED on, service lock disable signals G/LOCK LED off.



Service lock is deleted after memory format of the receiver (pint 2.12.).

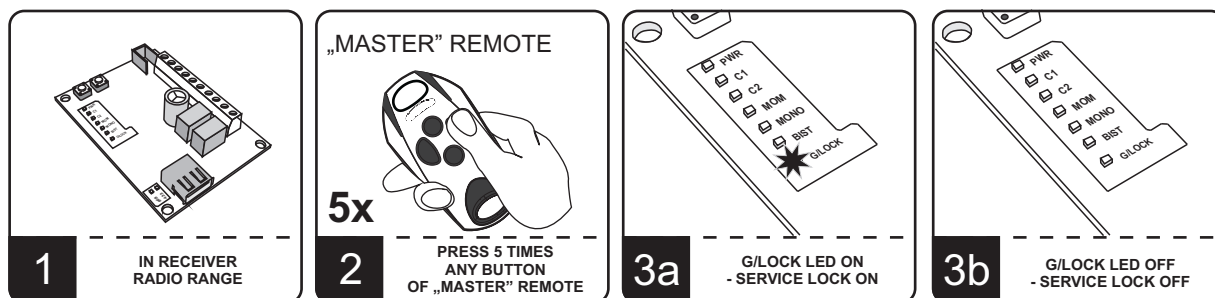


Fig.11. The service lock enable / disable.

2.10. Setting channel operating mode on bistable or momentary.

To set the operation channel C1/C2, press and release the C1/C2 button. Red LED C1/C2 lights on and yellow LED indicating currently set working mode lights on. Press repeatedly C1/C2 button, to set desired mode of operation. The yellow LED with MOM description set momentary mode, the LED with BIST description - bistable mode. To confirm the selected operating mode, press and hold C1/C2 button. C1/C2 LED blinks, and C1/C2 and MOM/BIST LEDs light off. The operating mode is saved.

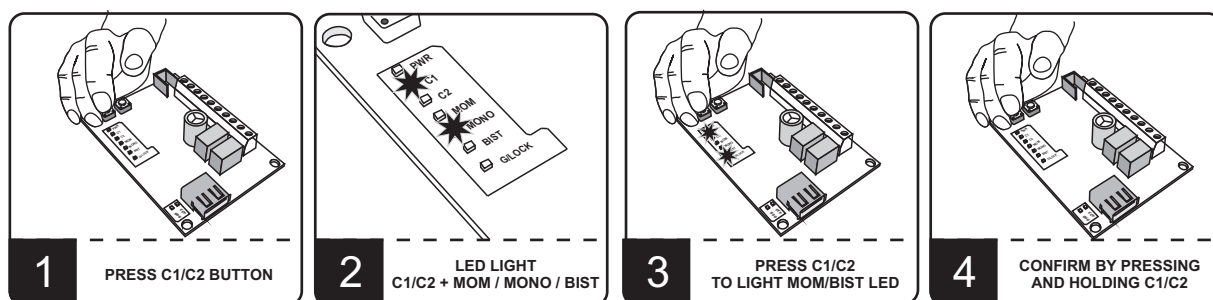


Fig.13. Setting bistable or momentary mode.



Pressing the other channel button while programing will leave procedure without saving.

2.11. Setting channel operating mode on monostable.

To set the operation mode of the channel C1/C2, press and release the C1/C2 button. Red C1/C2 LED lights on and yellow LED indicating currently set working mode lights on. Press repeatedly C1/C2 button to set monostable mode, indicated by the yellow LED with MONO description. To confirm the selected operating mode, press again and hold C1/C2 button. MONO LED goes out and after a moment starts blinking. While holding down the C1/C2 button deduct the required number of blinks and then release the C1/C2 button. Deducted number of MONO LED blinks will set the turn on time of channel in seconds or minutes. To set the activation time in minutes briefly press the C1/C2 button after C1/C2 button is released and MONO LED is blinking fast. To set the activation time of 0,5s release C1/C2 button before the first blink of yellow MONO LED.

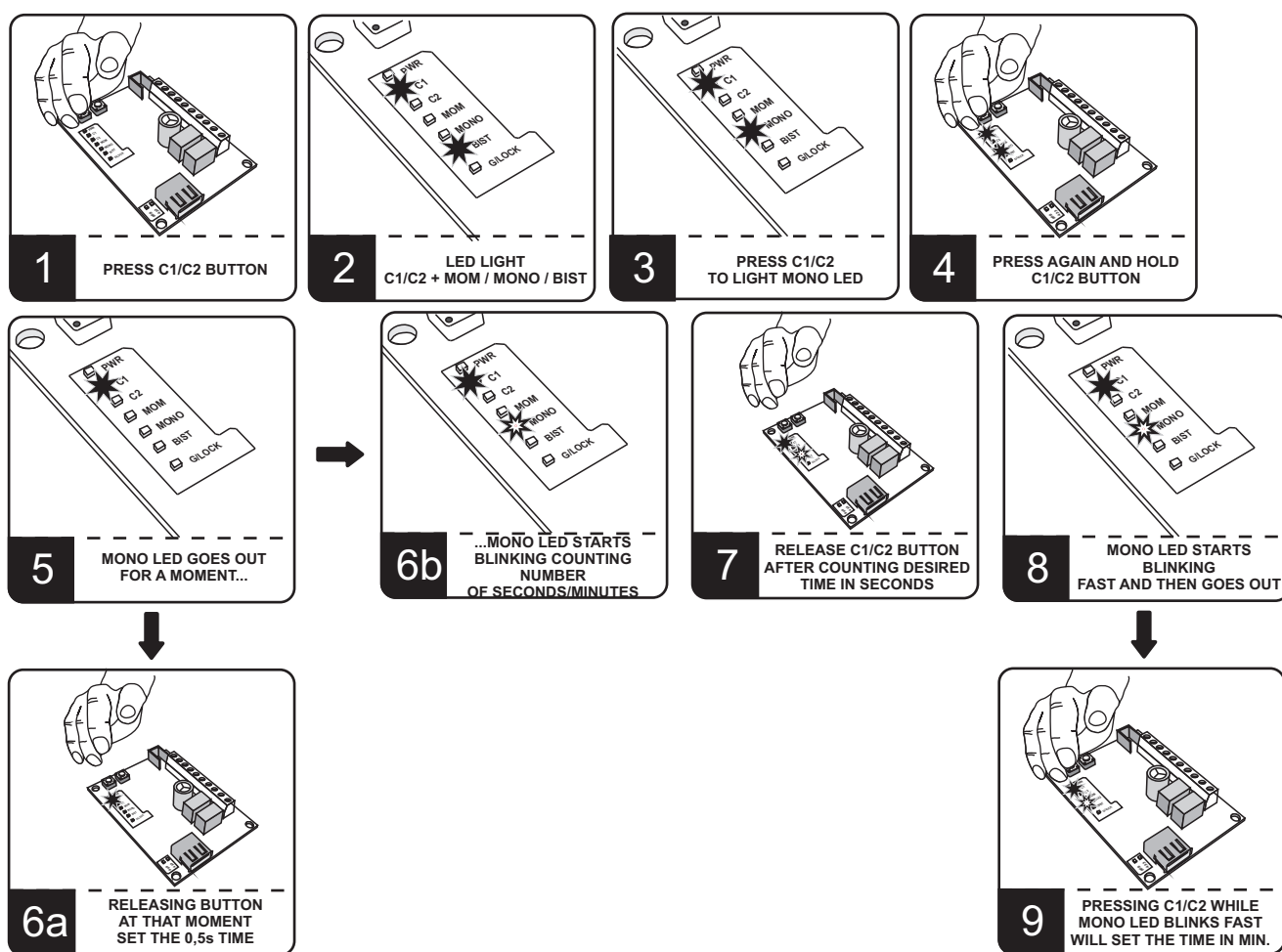


Fig.14. Setting the monostable mode.

2.12. Memory format.

To format the memory of the receiver, press and hold for 15 seconds C1 and C2 buttons. Release buttons when the LEDs are off.

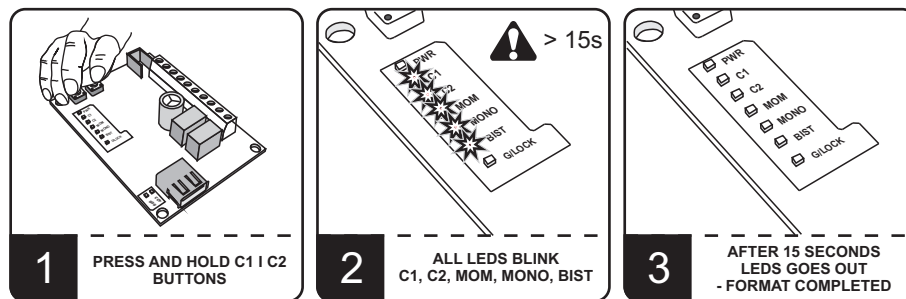


Fig.15. Memory format.

Memory format:

- removes all remotes from the receiver,
- disable easy remote registering function,
- removes authentication code of Galactic function,
- disable the service lock,
- sets the operating mode of channels to monostable with activation time 1s.

2.13. Verifying the number of added remotes

In order to check the number of remotes added to the receiver's memory, after adding or deleting a remote, hold down the receiver button for approx. 5 more seconds. LED will blink, indicating the number of programmed remotes. First LED indicates the number of tens (from 0 to 20 long pulses), then the number of digits (0 to 9 short pulses). Example showing pulses of added remotes is shown in Fig. 16.

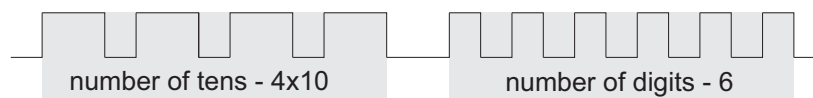


Fig. 16. Example of pulses of 46 remotes.

2.14. Receiver management via USB

The receiver is equipped with a USB connector for connecting MEMO service programmer. Receiver housing is equipped with a USB socket cover (Figure 1.) which allows connecting MEMO programmer without a need to remove receiver cover. Receiver communication with the programmer is signaled by G/LOCK LED.

Connecting MEMO service programmer to receiver allows:

- receiver firmware update,
- receiver memory backup,
- add remotes from a file to the receiver memory.

During the backup and update of the remotes using the MEMO programmer receiver remains inactive, it does not respond to the signal from the remotes.

In case of activated service lock, receiver cooperation with the programmer is not possible.

DISPOSAL

Electrical or electronic devices cannot be removed with everyday waste. The correct recycling of devices gives the possibility of keeping natural resources of the Earth for a longer time and prevents the degradation of natural environment.



WARRANTY

DTM System provides operational and ready to use devices and gives 24 months warranty from the selling date to the end customer. This time is counted according to the producer warranty labels or serial numbers placed on every product. DTM System obliges itself to repair the device for free if during the warranty period there are problems which come because of its fault. Broken device should be supplied on customer's expense to the place of purchase and enclose clear and brief description of the breakage. The cost of mount/dismount is covered by the user. The warranty does not cover any faults caused by improper usage, user self repairs, regulations and adaptations, lightning strikes, voltages or short circuits in the electrical grid. Appropriate legal acts regulate details of the warranty.



DTM System hereby declares that the radio receiver complies with Directive 2014/53/EU. The full text of the EU

Declaration of Conformity is available at the Internet address: www.dtm.pl